Flightfax

ARMY AVIATION RISK-MANAGEMENT INFORMATION

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Communications: Live by the Word, Die by the Word

Flightfax

ARMY AVIATION RISK-MANAGEMENT INFORMATION

BG Joseph A. Smith – Commander and Director of Army Safety
COL John Frketic – Deputy Commander
Dennis Keplinger – Publishing Supervisor
Paula Allman – Managing Editor
Julie Shelley – Staff Editor
Danny Clemmons – Graphics
e-mail - flightfax@safetycenter.army.mil
http://safety.army.mil

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Joe Smith

JOSEPH A. SMITH
Brigadier General, U.S. Army
Commanding

VCSA Sends:

The Army has been engaged in continuous combat operations for over 3 years with no decrease in operational commitment expected in the near term. Army Aviation remains a vital member of the combined and joint arms team we have deployed to win the Global War on Terrorism.

During the course of this conflict, Army Aviation has amassed over a half million flight hours, sustaining an OPTEMPO on our personnel and equipment that cannot be duplicated by any other aviation fighting force in the world. Every day our Army successfully conducts complex and integrated air and ground operations to defeat our enemies while minimizing the impact on those we intend to protect. We have fielded combat proven aviation formations with the best-trained, most experienced aviators, the most competent maintainers, and the finest equipment that our Army has ever produced. Simultaneously, based upon lessons learned and the aviation task force findings, we have begun to transform our aviation brigades into more robust, capabilities-based organizations populated with professional aviators and Soldiers who have internalized the Army's warrior ethos. Even so, it is time for commanders at all levels to pause and assess the status of their aviation units and the procedures used to identify and mitigate risk. This message is prescriptive in that it mandates certain actions by commanders at all levels and descriptive in that it also provides recommendations to enhance both safety and mission accomplishment through increased commander involvement and oversight.

Army Aviation has had 32 Class A accidents with 21 fatalities in the past 12 months. We must all realize that there are many factors and conditions affecting the force that exacerbate the risk associated with aviation operations and training. Aviation transformation, aviation reset, and preparation for combat increases the need for commanders at all levels to properly balance the challenges of individual aviator readiness level (RL) progression, aviation collective training, combined arms training and aviation maintenance, as well as safety and standardization. Commanders must recognize the competing demands of preparing their aviation units for the next combat rotation with the requirements to reset the aircrews, the aircraft, and restructure aviation formations.

We all appreciate the impact of reset on our collective training programs, but there are other, more subtle factors that also impact the force and our ability to prepare for extended combat operations. The lack of synchronization between the reset of aircraft returning from the fight and the preset (application of mission equipment package and aircraft MWOs) of aircraft going to the fight remains a challenge with which our aviation commanders must contend. This training detractor has become even more pronounced as the number of aircraft sourced for upcoming rotations exceeds the number currently in theater by more than a hundred airframes. Many of these additional airframes were added into the rotation late, but with priority missions that necessitated interruptions in the planned reset/preset schedule thereby extending the time to complete modifications. New aviators posted to these formations are challenged to receive the benefit of collective training with formations of dissimilar aircraft, so essential to today's current operating environment.

Recognizing these challenges, there are clearly trends or common threads associated with aviation incidents which must be addressed by senior leaders. Recurring factors in recent aviation mishaps include poor weather decisions, inappropriate crew mix, inadequate air mission briefs (AMB), stressed maintainers attempting to keep pace with the OPTEMPO, ill-advised single-ship missions, and compressed training and preparation timelines prior to deployment. The difference between a Class C and a Class A aviation accident, in many cases, might only be a couple of inches or even a couple of seconds. By improving the mechanisms used to assess aircrew preparedness and mission suitability, we will continue to foster an aggressive but disciplined approach to mission accomplishment. Combat, or training for combat, is not an excuse to deviate from standards.

The AMB is one such mechanism. When vetted and approved by experienced professionals, it serves as much more than authorization for the flight. The AMB requires the attention of the entire chain of command and plays a critical role in risk identification and risk mitigation when used as intended. It also allows the AMB briefing officer (company commander) to assess the aircrews' technical and tactical situational awareness, their level of training, their pre-mission planning, their risk assessment understanding, etc. Therefore, effective upon receipt of this message, you are to immediately change AR 95-1, paragraph 2-14, that only pilots-in-command (PCs) may serve as briefing officers. Commanders in the grade of 05 and higher will select briefing officers based upon their aviation experience, personnel qualified and current in the mission profiles they are to brief, and possessing the ability to quickly assess and apply risk mitigation techniques for the mission and aircrew. These commanders will designate their formation's briefing officers in writing. Once the briefing officer and the crew have mitigated the risk to the lowest level, the mission approval will be delegated to the appropriate approval authority IAW the unit SOP and local policies.

Second, in all instances of an aviation Class A accident, the first general officer in the chain of command is required to accept the outbrief from the Army Safety Center or any centralized safety investigation team. This is commander's business and the Army, its Soldiers, and their families require your personal attention in the matter. Moreover, all assistant division commanders will attend the division commander's course at Fort Rucker, AL, to elevate the awareness and increase the involvement of the Army's senior leadership in aviation issues and decision making. Ultimately, aviation mission accomplishment is about maintenance and training standards. You will rigidly enforce these standards; the result will be enhanced aviation safety and a more disciplined force with pride in their unit, pride in their aircraft, and pride in their accomplishments.

Third, we are considering developing guidance for the brigade and battalion command boards with respect to minimum pilot qualifications and experience level for command selectees to enhance the tactical and technical competence of our aviation commanders in the field.

We must rely more on the leading indicators as tools to evaluate their state of readiness, training and safety, and less on lagging indicators such as the unit status report (USR), flying hour reports, and accident reports. The absence of an accident does not mean the presence of safety. Monthly updates on such activities as combat mission simulator (CMS) utilization rates, aviation maintenance, especially the mission abort rates; company commanders that are non-PCs; and aviator RL progression are great leading metrics to assess if your formation is at risk. I strongly encourage commanders to visit the CMSs and evaluate the instructor pilots as they review emergency procedures in the device with an aircrew, then observe the quality of the debrief that follows. Check the flight line periodically and see if the crew chief launching or recovering the aircraft matches the name on the aircraft logbook and nose, and then ask the NCOIC why or why not. Check the AMB files in Flight Ops and have the mission briefer brief you on what questions he is asking the aircrews, especially the PC. Proactive measures such as these will increase awareness of day-to-day activities in your command and will alert you to problems before they arise.

Additionally, our aviation battalion commanders should hold weekly pilot briefings. These events should be protected like Sergeants' Time training and noted on the training calendar, ensuring attendance rosters are maintained. Subject matter should facilitate and feed into individual and collective training IAW the quarterly training plan. Aircrew survival equipment (ASE), standardization and safety issues, weapons employment (air and ground), maintenance procedures, weather decisions, crew coordination, and Operations Iraqi Freedom and Enduring Freedom (OIF/OEF) lessons learned are just some of the topics. Battalion commanders should develop evaluation criteria for PC boards, select members to serve on that board, and centrally screen and evaluate all candidates coming before that panel as a method to vet and standardize the skills of the most basic building block of our aviation formations—the pilot in command. This procedure should be codified in the battalion aircrew training program (ATP). Further, brigade and battalion commanders should require their company commanders to achieve PC status prior to deploying to combat.

Commanders will involve their command sergeants major and their first sergeants in this endeavor as well. Our NCOs have a wealth of experience and knowledge to share. Count stripes when on the flight line. The quality of launch, recovery, and FARP operations are directly proportional to the number of stripes on the flight line. Battalions should establish criteria for certification of crew chiefs in the unit and incorporate this concept into the unit ATP. It should culminate in a board analogous to the PC board. The OPTEMPO challenges that face our aircraft maintainers demand that we select only the finest from our AVIMs and AVUMs to maintain, launch, and recover these platforms.

The Army's senior leadership understands that aviation is inherently dangerous, and is even more so at this time because of the factors already discussed. A good risk assessment program does not result in mission cancellation; instead, it produces modifications to the plan before the operation order is briefed, and mitigates risk during the execution phase.

I want to assure commanders and aviators in the field that this message is not intended to imply that we want to foster a zero defect or a risk averse climate. The Army's senior leadership understands that aviation is inherently dangerous, and is even more so at this time because of the factors already discussed above. A good risk assessment program does not result in mission cancellation; instead, it produces modifications to the plan before the operation order is briefed, and mitigates risk during the execution phase. Our Soldiers, their families, and our Army depend on your increased safety awareness and vigilance in identifying risks and implementing the proper control measures. I believe the prescriptions and recommendations above will help ensure we maintain the world's finest Army Aviation force. I expect us to work together for the benefit of our service and begin *NOW*.

—Adapted from General Richard A. Cody's message to the field January 2005. GEN Cody, an Army Aviator, became the 31st Vice Chief of Staff on 24 June 2004.

Written by accident investigators to provide major lessons learned from recent centralized accident investigations.

Communications: Live by the Word, Die by the Word

MAJ Bart R. Tragemann
U.S. Army Safety Center

Communications. If you think of all the situations leading up to a mishap, you can pinpoint a breakdown (at some point) in communications. A breakdown in communications is usually the first hazard that creates a chain of events, a chain that ultimately leads to a mishap. Read on!

As a flight of two OH-58Ds were about to enter mission profile for a zone reconnaissance, the lead aircraft called back to trail, "Buffalo." The trail aircraft responded back to lead, "Roger, Buffalo." Buffalo is the unit's brevity codeword for slowing down to mission profile. There were no other communications between aircraft for the remainder of the flight. The lead aircraft then assumed mission profile at 100 feet AGL and 70 KIAs in zone. Over the next 3 minutes lead conducted two successive standard "S" turns. While flying in a southerly direction, the lead aircraft then conducted a 360 degree right-hand turn and slowed down to 35 knots.

26 Seconds later…

After turning 285 degrees, the trail aircraft's main rotor blades struck lead's vertical fin and tail rotor components. After colliding, both aircraft lost control and impacted the ground. Both aircraft were totally destroyed. The lead aircraft pilots received minor injuries and the trail aircraft pilots suffered fatal injuries.

Why?

Why did the collision occur? What could both flight crews have done to prevent this accident? The Centralized Accident Investigation board suspects the trail aircraft lost sight of lead's aircraft sometime during the 3 to 4 minute period following the "Buffalo" radio call. During this period, trail never made a radio call to inform lead that they no longer had them in sight. Additionally, during the execution of the reconnaissance, the lead aircraft conducted an unannounced 360-degree right turn. **BOTTOM LINE: There was no radio communications between the two flight crews**.

All Army Aviation rotary-wing aircraft deployed to Operations Iraqi Freedom (OIF) and Enduring Freedom (OEF) fly in multi-ship formations. The critical aircrew coordination element is positive communications between crewmembers within each aircraft *and* within the flight. The qualities, elements, and objectives of aircrew coordination training apply to *both* aircraft in a flight.

Mid-air collisions between rotary-wing aircraft can happen anywhere. Some historical examples include aircraft operating within a flight running into each other, aircraft operating in and around a forward arming refueling point (FARP), or between aircraft conducting recon or attack operations in the same airspace operating zone that other transient aircraft must fly through to reach their destination.

Due to "near miss" mid-air collisions in OIF and OEF between dissimilar transient aircraft, appropriate mitigation measures have been instituted. For example, better communications between approach control, tower, ground, radio, common traffic advisory frequency, and the implementation of altitude restrictions have successfully reduced the number of near misses and prevented mid-air collisions between transient aircraft and other aircraft operating in the same airspace.

Positive communications between aircraft within a flight is the best way to mitigate the risk of a mid-air collision during a mission. Inter-cockpit communications or radio calls between aircraft for situational awareness is critical.

Misinterpretation

Through numerous interviews, aviators stationed throughout Iraq have confirmed they have experienced, at one time or another, the visual illusion called ground light misinterpretation. When ground lights are confused with other aircraft night vision goggle (NVG) position lights, aviators might adjust their attitude incorrectly based on relative position of misinterpreted ground lights.

Air mission briefings

Lost visual and linkup procedures should be briefed at every aircrew mission briefing (AMB) just as inadvertent instrument meteorological condition procedures are briefed as appropriate for the forecasted weather conditions. When a trail aircraft loses sight of lead, an immediate radio call must be made and stated as such. A link-up procedure can then be executed utilizing a technique based on the tactical situation. Likewise, when the lead aircraft makes turns that are not standard during a mission, the turn direction should be called back to trail. By using positive communications, situational awareness is increased and accidents are less likely.

Aircrew training manuals

The fundamentals of aircrew coordination should be applied. Aircrew training manuals (ATMs) describe basic aircrew coordination fundamentals as they pertain to aircraft crewmembers. However, current ATMs do not directly relate these fundamentals to inter-cockpit coordination. Even though there is not a separate section emphasizing aircrew coordination training (ACT) between aircraft, pilots should apply all fundamentals to aircraft within a flight.

A final note

Units should always incorporate positive communications whenever situational awareness is lost. Aerial link-up procedures should be developed and briefed during the AMB. The board has recommended that inter-cockpit communications and lost visual contact procedures be added to the Flight School XXI program of instruction and included in the Aircrew Coordination Training Enhanced (ACTE), successor to ACT, exportable package.♦

—MAJ Bart R. Tragemann is an accident investigator for the U.S. Army Safety Center. He may be contacted by calling DSN 558-1180 (334-255-1180), or e-mail bart.tragemann@safetycenter.army.mil.

Is ACTE the Cure?

CW3 Kenneth R. Czarnecki
DES, Fort Rucker

We have all been through academic and flight training to enhance aircraft crew coordination, but accident investigators at the Safety Center continue to find cases where lapses in crew coordination directly contribute to serious accidents.

Recent accident investigations reveal crew coordination errors are a main causal factor in aviation accidents. For example, an AH-64 two-man crew was conducting a regimental Deep Attack. The pilot (PI) had only 300 hours in the AH-64, but was aware that his instructor pilot (IP) had over 2,000 hours of flight time and was highly respected. The PI was on the controls while they were en route. The IP, while he was busy using the TADS, asked the PI to make a radio call. The PI assumed the IP wanted to take the controls, as the radio frequency was not preset. The PI released the controls and focused his attention on the radio, which left *no one* flying the aircraft. The aircraft descended into the trees at 90 KTS. The IP was fatally injured and the $12M aircraft was destroyed.

The results of the Centralized Accident Investigation board were conclusive. Crew coordination error, specifically on the part of the IP, was the direct cause of accident. The IP lost situational awareness because he assumed the PI could continue to control the aircraft while attempting to change radio frequencies. But there was a deeper, more disturbing element present as well. Assumptions not spoken can often result in failures … even worse, tragic losses. (For more information on this accident, see January 2003 *Flightfax*.)

Current issues and trends

Lack of effective aircrew coordination continues to be cited as a contributing factor in flight accidents, and is a factor limiting attainment of full-mission effectiveness. The Director of Army Safety reported in the December 1999 *Flightfax* that FY99 produced Army Aviation's worst safety performance since Desert Shield/Desert Storm. Five years later, Army Aviation continues to suffer crew coordination error-related deaths. Roughly 45 percent of all aviation accidents are still attributed to crew coordination errors.

ACT defined

The Army defines aircrew coordination as a set of principles, attitudes, procedures, and techniques that transforms individuals into an effective crew. The stated objective of aircrew coordination training (ACT) is to provide aircrews with the knowledge, skills, and attitudes necessary to increase mission effectiveness while decreasing errors that lead to accidents.

Research is moving into measuring actual performance of crews while employing crew coordination behaviors. In addition to incorporating correct behaviors in the cockpit, involvement of the entire crew is being researched from not only a flight safety perspective, but a security one as well. Human factors and crew coordination are being re-looked in modern aircraft designs, as full-glass cockpits such as the AH-64Ds mandate a pilot's attention inside the aircraft for a considerable period of time. While conducting tactical flight operations, remaining inside the aircraft for 2-3 minutes at a time can have a significant impact on mission success.

Aircrew Coordination Training Enhanced (ACTE) is essential in our modern aircraft with their respective complexities. To ensure aircrews properly understand the principles and techniques of ACTE, a training program has surfaced to help the aviator. The U.S. Army Aviation Center (USAAVNC) has teamed with the U.S. Army Safety Center (USASC) to attack the problem of ineffective aircrew coordination. The Directorate of Evaluation and Standardization (DES) has the charter to train ACTE in the field and is ready to deploy a mobile training team (MTT) and provide commanders with ACTE "train the trainer" solutions aimed directly at improving aircrew, team, and leader coordination.

ACTE is web-based, interactive courseware with the capability to develop and field vibrant training support packages (TSPs) tailored to integrate the aircrew coordination challenges distinctive to a specific aircraft. The heart of ACTE is the introduction of mission/design/series TSPs which supplement the core instruction and provide measurable feedback systems adapted to each. Ideally, when the program is fully implemented, USAAVNC will develop and annually update each TSP with current and relevant aircrew coordination trends. Directorate of Training and Doctrine (DOTD), DES, USASC, and the field user will collectively provide input to TSP development. Additionally, to ensure TSP lessons learned during unit operational or training missions do not go unheeded, instructors can confirm unit aircrews do, in fact, identify, apply and assimilate such lessons learned into future missions. It cannot be overemphasized that each crewmember is vital to the successful implementation of the overall ACTE program, and his input in improving the TSPs is critical to the success of ACTE.

Crewmembers must be highly proficient in all ACT behaviors and skills, and be able to apply and evaluate them in the organization's mission environment. To assist in achieving this objective, ACTE relates the ACT crew coordination objectives (CCOs), basic qualities (BQs), and crew coordination elements to the Army risk management process and demonstrates their use as control measures to mitigate risk. To evaluate the effectiveness in mitigating risk, ACTE contains the ACT performance evaluation process utilizing the criterion-referenced behaviorally anchored rating system (BARS). Inherent to the ACTE performance evaluation process is the ability to identify and apply the CCOs, BQs, and elements to operational and simulated mission settings and apply individual experience and knowledge to the ACTE course of instruction.

This training requires well-developed observational and evaluative skills. It is imperative it be conducted and disseminated Armywide because of its great potential to help conserve vital Army resources—both in terms of lives and equipment. Recognizing this responsibility, every opportunity will be taken to provide all crewmembers with the behaviors and skills needed to train and evaluate unit aircrews, and to mitigate the risks faced on a daily basis in this hazardous operational environment.

ACTE will contribute to aircrew training and understanding of the risk management process and measurably reduce ineffective aircrew coordination and resulting accidents. With implementation of the ACTE courseware, development of dynamic TSPs, and growing cadre of ACTE trainers and ACTE-trained crewmembers, the Army can expect to see a reduction of accidents attributed to ineffective aircrew coordination. ♦

—CW3 Czarnecki is a UH60A/L SP/IE for DES at Fort Rucker, AL. He can be reached at DSN 558-1748 (334-255-1748) or e-mail kenneth.czarnecki@rucker.army.mil.

Aviation and Compo

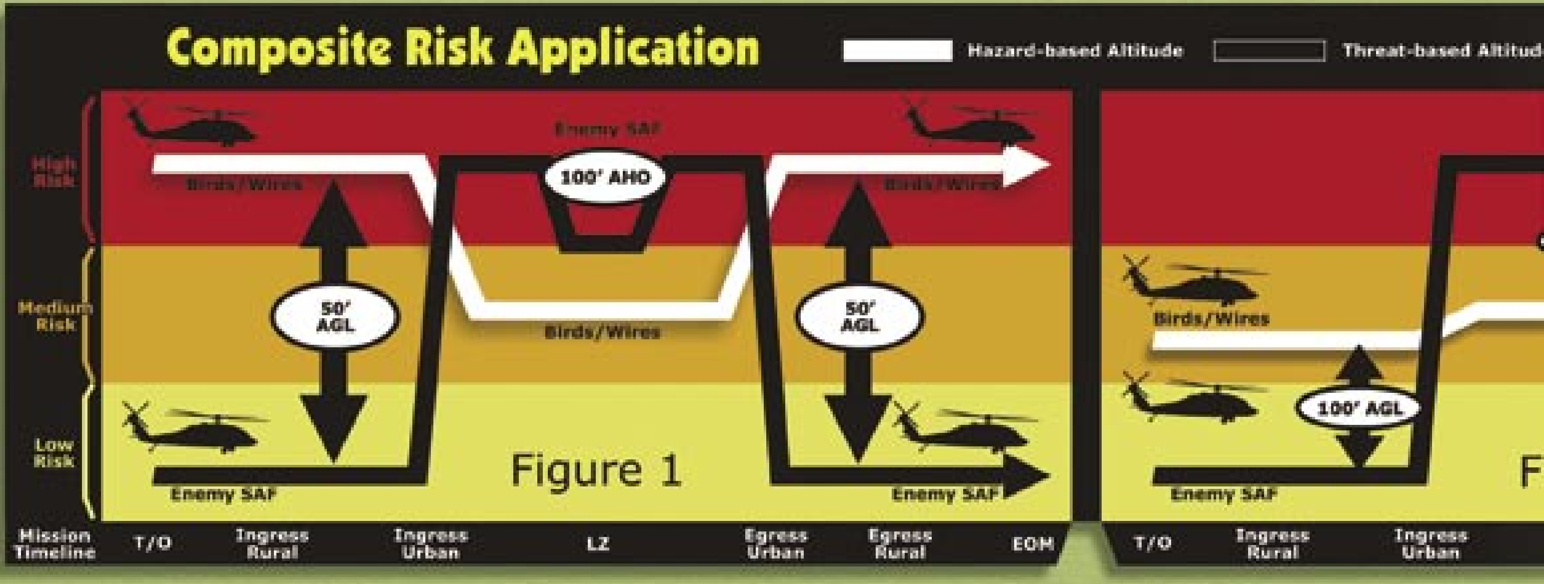
MAJ Ron Jackson
U.S. Army Safety Center

With increased OPTEMPO and an ever-changing environment, mission planning becomes a vital link to ensuring mission accomplishment. However, often overlooked is the identification and understanding of composite risk.

Risk management has been, for some time, an integral part of mission planning at all levels. As part of the planning process, leaders and staff sections continuously try to identify hazards. Historical accident data provide planners with the tools to assist in identifying hazards and implementing controls to mitigate those risks. But what about *tactical* hazards? Does tactical risk outweigh accidental risk? Or is there a composite of both tactical and historical hazards that can better prepare aircrews for mission execution?

Composite risk can best be defined as the integration of historical accident data with the tactical mission. How can identifying composite risk aid aircrews during mission execution? First, you must understand hazard-based risks versus threat-based risks. For example, hazard-based altitudes are those flight levels where the predominant risks to aircraft are natural or man-made obstacles. Analysis of historical accident information indicates wire hazards and bird strikes are the primary threat to aircraft operating at terrain flight altitudes. Although these hazards are common at all levels of terrain flight, they are more prevalent at terrain flight altitudes below 100 feet AGL. Threat-based altitudes are those flight levels that make aircraft more susceptible to surface-to-air fires (SAF) and generally increase as altitude increases. In essence, hazard-based and threat-based altitudes are inversely related in that as altitude increases, the risk of man-made and natural flight hazards decreases, but the threat of SAF increases.

Hazard-based and threat-based risks can be categorized as high, medium and low,



osite Risk Management

where each category represents a composite risk factor. A high risk-based altitude would indicate a mission is conducted in a flight profile that historical and threat data indicate aircrews must be cognizant of man-made hazards, natural hazards, and/or threat capability. For example (Figure 1), a 2-hour mission conducted continually in a high hazard-based altitude could indicate the aircrew is operating at 50 feet AGL, an altitude that makes him more prone to wire strikes and bird strikes, as compared to the threat capability. However, the primary risk to the aircrew is not the threat-based hazard but the man-made and natural hazards. Conversely, as the altitude increases, the threat-based hazard increases while the hazard-based risk decreases.

What does this mean?

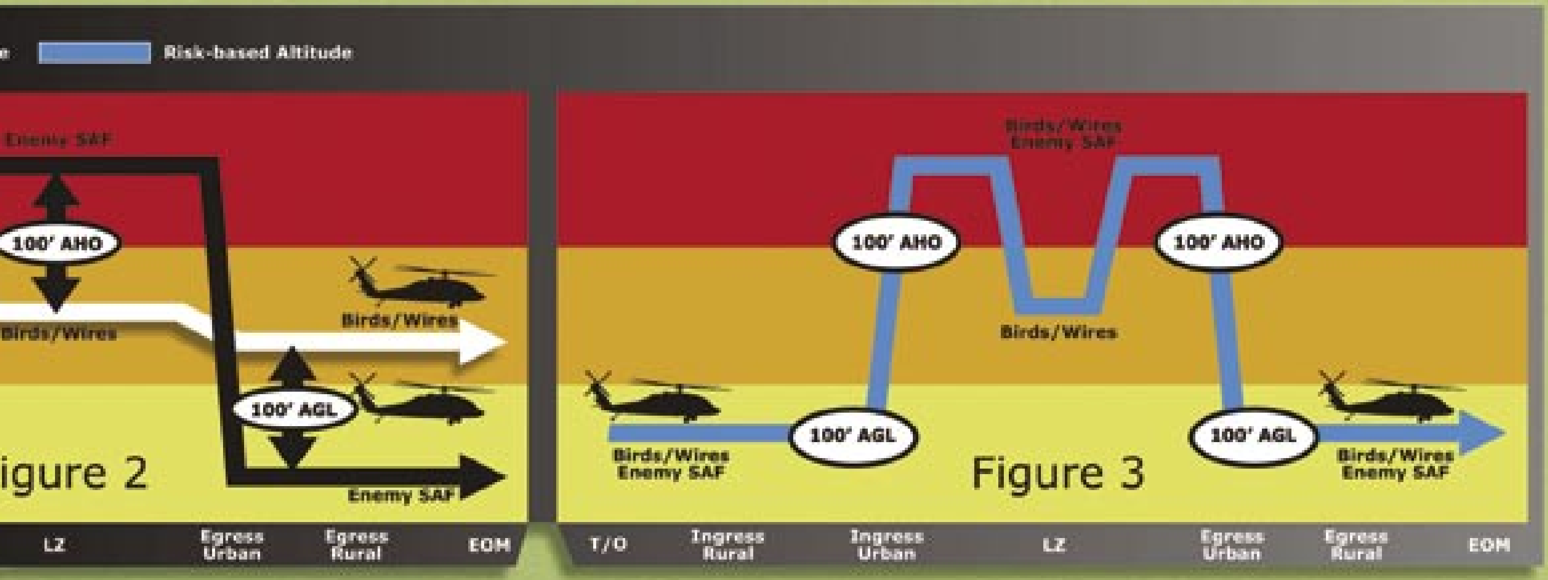
The previous graphic depicts aircrews that are continually operating at a high risk-based altitude. This increases the pilot's workload because he not only must be concerned with the enemy threat, but he must also maintain situational awareness of the man-made and natural hazards.

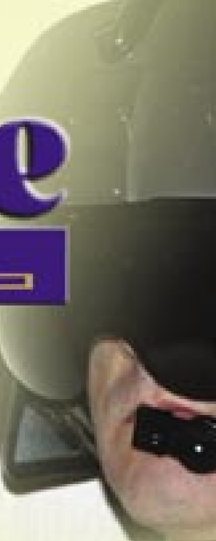
By analyzing the hazard-based risks and the threat-based risks, we can determine that a modest increase in altitude reduces the risk of the natural and man-made hazards with no discernable difference in the threat-based risk (Figure 2).

By analyzing composite risk, we can combine the hazard-based and threat-based altitudes to identify a risk-based altitude (Figure 3). As a result of combining these two elements, only a small portion or no portion of the mission might have to be actually flown at a high risk-based altitude. This means the pilot's workload can be reduced by eliminating or mitigating threat or flight hazard risks.

Knowing and understanding composite risk assists leaders and planners in establishing risk-based altitudes, which not only provides adequate safety from the threat environment, but minimizes the impact of man-made obstacles and natural hazards to flight. Combining these elements enable leaders to analyze flight profiles and ultimately aid in reducing the pilot's workload as it pertains to flight hazards and prevents aviators from continually operating in the high risk-based altitudes during mission execution. ♦

—MAJ Ron Jackson is an accident investigator for the U.S. Army Safety Center. He may be contacted by DSN 558-3754 (334-255-3754) or e-mail ronald.jackson1@us.army.mil.





ALSE Advice FROM USAARL

Important information on aviation life support equipment.

LTC Mark Adams, CW4 Dennis Bergstrazer, and Joe Licina
USAARL, Fort Rucker, AL

Wear It Right

(This is Part 1 of a 3-part series. Other topics concerning ALSE will be published in succeeding issues of *Flightfax*.)

ALSE has performance limits just like your aircraft. If you don't wear it or look after it correctly, it will not function correctly. The U.S. Army Aeromedical Research Laboratory (USAARL) doesn't always get the design absolutely right for every type and shape of aviator; that's why we depend on your feedback to tell us when equipment is uncomfortable or doesn't do its job. Hundreds of thousands of dollars are spent to produce the best ALSE possible to give you the best chance of survival in the event of a mishap.

Helmets

Helmets have developed from the early days of providing limited impact protection into sophisticated systems for improved head impact protection, face and eye protection, hearing protection, communications, and mounts for night vision and sighting systems. All helmet designs undergo rigorous trials to ensure they adhere to the standards for protection, retention, and noise attenuation. Several companies market kits to improve comfort, protection, and noise attenuation; however few of these products have ever undergone validation trials, and those that have been tested, tend to produce inferior results when compared to the original design. Just because it feels more comfortable doesn't make it safe. If your helmet is uncomfortable, ask to be referred to the Problem Fit Program at USAARL.

Let's look at specific concerns about helmets and we will explain the importance of "wearing it right."

■ **General condition**. Your aviator helmet is not like a football helmet. It is designed to protect against major impacts only once, not repeatedly. Your helmet is one use only. A drop from a chair to the floor renders your helmet permanently unserviceable from the crashworthiness point of view. Look after it.

(1) **Outer shell**. The outer shell is strong, but an impact, even one that leaves no visible damage, can cause a hidden fracture, delamination and weakness, thereby reducing its effectiveness.

(2) **Energy attenuating liner (EAL)**. The white polystyrene EAL inside the shell provides 90 percent of the impact protection. Minor impacts may result in permanent compression or even fracture of the liner, which will not perform adequately if it takes an impact in the same place a second time. You should not try to reduce hot spots by pressing your thumbs or a spoon over the surface to

make your helmet more comfortable. This will reduce the effectiveness of the helmet and might make the difference between no head injury in an accident and incapacitation. If you are incapacitated you will not be able to egress safely in the event of fire or ditching.

■ **Size**. When it comes to helmets, size matters! A helmet that is too large may feel more comfortable, but it will be more difficult to secure and will be more likely to come off your head in an accident. Even if it doesn't come off your head, it is likely to rotate forward on impact leaving the back of your head unprotected. Also, you will need more counterweight for night vision goggles (NVGs) if your helmet is loose. This adds to the strain on the neck, causing fatigue and reduced mission effectiveness. Apache pilots should check the number of "shims" inside their helmets. More than FOUR shims front and rear means that your helmet is too large and you should get it changed. Bottom line: Keep it tight!

■ **Chin and nape straps**. Keep these straps tight to make sure the helmet stays on your head in an accident. There are many examples of pilots being killed by head injuries after their helmets came off, when they otherwise would have lived. Don't become a statistic—keep them tight.

■ **Thermoplastic Liner (TPL)**. This is the only liner currently cleared for use in the HGU-56/P. No other liners have passed the acceptance standards, and they do not have airworthiness certification. You may be reducing the ability of your helmet to stay on your head and protect you if you add illegal and untested liners. We are aware, however, of comfort issues and many of you have heard of the ZetaLiner™ as a replacement for the TPL. The ZetaLiner™ is not currently cleared for general use. However, it has recently undergone testing here at USAARL and we will have comprehensive advice for you soon.

■ **Ear cups**. The ear cups issued with the helmet are the only ones currently cleared for use. The only cleared modification is the use of Communications Earplugs (CEPs), which markedly enhance hearing protection, speech intelligibility, and thus, mission effectiveness. No other ear cup modifications or kits are acceptable. Bear in mind that uncleared kits may provide less protection against side impacts and noise. Don't forget—if you lose your hearing, you will lose your flight status.

■ **Visor**. Polycarbonate visors will protect your upper face, eyes, and forehead from large objects like birds or fractured windshields. The dark visor also will help protect against harmful ultraviolet radiation. Keep them clean and keep one of them down when you fly.

The Army strives continually to provide you with the best helicopter helmets in the world. Why make your own modifications and turn them into something less?

Remember the bottom line: ***Wear It Right and Keep It Tight!*** ♦

—For more information contact LTC Adams, CW4 Bergstrazer, or Mr. Licina at the Aviation Life Support Retrieval Program, USAARL, Fort Rucker, AL. All can be contacted by calling DSN 558-6893/6815 (334-255-6893/6815) or e-mail Joe.Licina@se.amedd.army.mil.

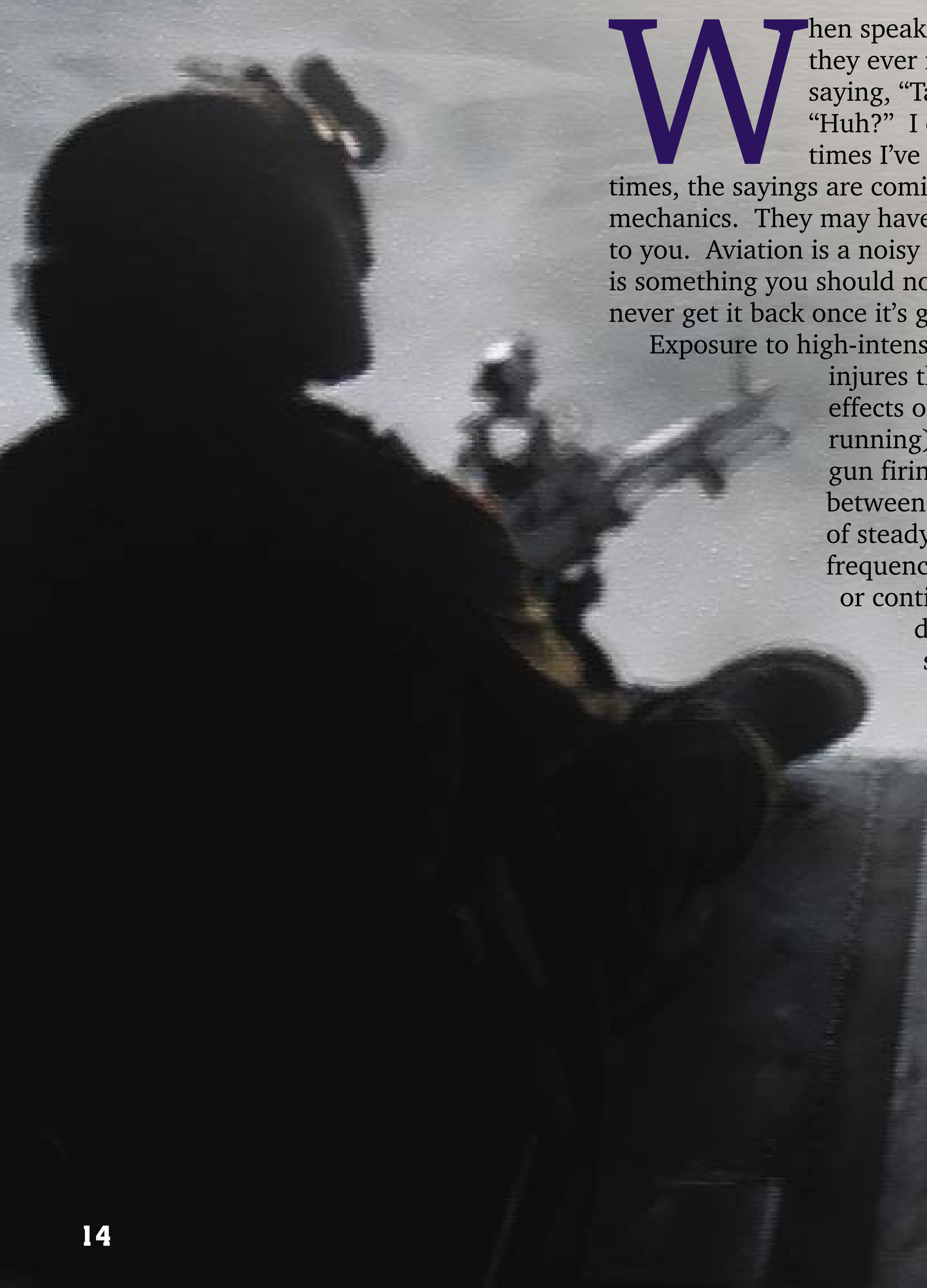
Do—
- Keep it in good condition.
- Wear the correct size.
- Tighten chin and nape straps.

Don't—
- Treat your helmet like a football helmet.
- Fly with chin or nape straps loose.
- Change the ear cups.
- Carry out illegal modifications.

Talk Into My Goo

"I Caaaan't Hearrrrr Youuuuu!"

Gary D. Braman
CAS, Inc.
Huntsville, AL



When speaking to a colleague, have they ever responded to you by saying, "Talk into my good ear!" or "Huh?" I can't count the number of times I've heard those remarks. Most times, the sayings are coming from older pilots and mechanics. They may have even yelled their response to you. Aviation is a noisy business and your hearing is something you should not take for granted. You can never get it back once it's gone.

Exposure to high-intensity noise PERMANENTLY injures the hearing mechanism. The effects of steady-state (helicopter running) and impact noise (machine gun firing) on hearing differ between each of us. The effect of steady-state noise depends on frequency and intensity, intermittent or continuous exposure, exposure duration, and individual susceptibility. The effect of impulse noise depends on peak pressure, duration of individual impulses, number of impulses per exposure period, frequency content, angle of incidence, rise time of impulse, and individual susceptibility. Noise is one of the most common health hazards we face in the environment

od Ear

in which we operate, which includes both the training and combat environments. The most dangerous occupational noise is from weapons firing. Remember, the Black Hawk operator's manual requires double hearing protection when window guns are firing.

Exposure to high-intensity noise may cause hearing loss that can adversely affect your combat readiness. This includes the communications between the crewmembers during a helicopter flight in a combat zone. Noise-induced hearing loss can cause a breakdown in aircrew communications by requiring commands to be repeated or result in them not being heard at all. Proper aircrew communications is essential to the safe operation of today's modern aircraft. And though improbable, a breakdown in aircrew communications (due to a noise-induced hearing loss) may eventually result in an aircraft accident.

You can protect your hearing by doing a few easy things: wear proper and serviceable hearing protection in all noise hazard areas; ensure your helmet is properly fitted; ensure the ear cups in your helmet and earmuffs are serviceable; ensure your earplugs are clean and serviceable; and most importantly ensure your hearing is checked annually.

A recent survey from the U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM) showed that 274 (22.6%) of the 1,212 15Ts and 67Ts tested in 2003 have a significant threshold shift (STS). This means a hearing loss. Normally, you will lose your hearing first at the higher frequencies (4,000 Hz). This is detected when normal conversations require you to ask someone to repeat what they just said.

Over the years, the aviation community has been provided with excellent hearing protection devices to include the aviator helmet, earmuffs, earplugs, and the Communications Earplug (CEP). Today's Army flight helmet, the HGU-56/P, provides roughly twice the hearing protection as compared to the earlier SPH-4 series helmet. SPH-4 stands for Sound Protection Helmet No. 4, and in its day, it provided significant improvements to hearing protection as compared to its predecessor, the APH-5 flight helmet. It should be noted that even with a properly fitted, modern HGU-56/P helmet, the simple act of wearing either a pair of eyeglasses or a chemical/biological mask hood will break the seal of the helmet's ear cups, which will degrade both the helmet's hearing protection and speech intelligibility characteristics by allowing a path for noise to enter the ear. In these cases, you should wear additional ear protection in the form of either a standard earplug, or preferable the CEP.

You can protect your hearing by doing a few easy things: wear proper and serviceable hearing protection in all noise hazard areas; ensure your helmet is properly fitted; ensure the ear cups in your helmet and earmuffs are serviceable; ensure your earplugs are clean and serviceable; and most importantly ensure your hearing is checked annually. Additionally, wear double hearing protection if you're required to wear eyeglasses or the chemical/biological mask hood.

Remember, noise-induced hearing loss is painless, progressive, permanent, and preventable. ♦

—Mr. Braman is a Senior System Safety Analyst for CAS, Inc. He supports the Utility Helicopters Project Management Office in Huntsville, AL.

We Don't Need No Stinkin' Checklists!

Cdr. Stephen McInerney
U.S. Navy

It took 15 years in the cockpit, but I have become a born-again believer in the importance of checklists and procedures. I once followed them religiously, but over the years as I became a skilled pilot, I no longer needed them ... or I thought!

I've been back in the fleet for 2 weeks after an absence of 2 years. I've been flying every day and relearning tactics and my aircraft. There I was ... hanging onto the vertical stab—wind rushing through my hair and the scream of the engines (as well as my electronic countermeasures officer) ringing in my ears. I am befuddled! How did I forget to perform another mission critical item? How did I get so far behind the aircraft? As I sit alone in my room, I think back to a night long ago....

It was during a recovery that was winning high marks for buffoonery. The room was very quiet as the Commander Air Group (CAG) muttered and swore. Finally, as the recovery was completed, CAG turned slowly to the assembled group of COs, XOs, and department heads and growled, "The most dangerous SOB on that flight deck is a new XO." We all nodded sagely. I had no idea what he was talking about.

Now I understand. A brand new nugget may be green, but he knows enough to ask questions and follow a checklist. Someone who remembers having been there and done that needs to have a large risk management bull's-eye painted on his helmet. Managing high expectations, numerous distractions, and low proficiency is no way to go through a line period. There was no great epiphany. I should have expected it. When I left the cockpit 2 years ago, I was a seasoned aviator, current in my warfare specialty and proficient. I could juggle and compartmentalize the responsibilities of a strike leader, instructor, and department head. While I was confident, I was not complacent. Now back in the cockpit without the proficiency, the situational awareness, or the confidence of 2 years ago, I have made two important discoveries. I depend on the habit patterns I have developed over the years ... and I have forgotten many of them.

This is where my renewed faith in checklists and procedures comes in. Good habit patterns can be used as a template to overlay on a mission. They prioritize and order tasks. They serve as an internal master caution panel. Break a habit pattern and a series of intuitive warnings sound: the nagging, vague uneasiness of having forgotten something; the butterflies in the gut; the hair standing at attention on the back of your neck. When based on checklists, procedures, system knowledge, and situational awareness they can point to something unsafe or adverse to the mission.

However, this ability is perishable. Time out of the cockpit or away from certain missions and these indicators are no longer reliable; for example, forgetting that the fuel dumps are on, failing to complete combat checks as the strike pushes, or starting the descent out of the marshal stack with the incorrect radios or navaids selected. All these incidents demonstrate the danger of relying on habit rather than checklists. Habit patterns take time and discipline to develop. When these habit patterns are lost or corrupted, you often don't realize it until it's too late. They have their place in the development of experienced aviators. Tactical aviation is a complex and dynamic environment. Anything that can increase one's ability to process data and maintain situational awareness should be embraced. In our profession, the intuitive answer is not necessarily the correct answer and often there's enough pressure to shrink the largest brain to the size of a peanut. It's an environment made manageable by the adherence to checklists and procedures. ♦

—Reprinted with permission of Cdr. Stephen McInerney and the Navy Safety Center Web site.

The Automation Edge

Mr. Lawrence Adams
and
Mr. Vincent Carman
LMR, Inc.

Commanders, logisticians, and maintenance managers now are relying on automation to give them an edge on the battlefield. The ability to view assets and unit readiness is an important tool commanders have that enables them to utilize their assets effectively. Problems arise when the systems used provide just as much erroneous information as correct information.

The Unit Level Logistics System-Aviation (ULLS-A) automates supply, maintenance, and aircraft readiness reporting. It also maintains aircraft historical, maintenance, and operational records required by aviation units to manage their logistics needs. The system has evolved from a cumbersome DOS-based program to its current Windows 2000® configuration. Many improvements have made it user friendly, and most of the old problems related to inaccurate readiness reporting have been addressed. However, as we all know, software problems will still occur at the most inopportune time. Compounding those problems are operator error and hardware failures. Add pressure from the commander, and you have a frustrated operator who would rather go back to pencil and paper.

Similar to flight training, the first important step in streamlining ULLS-A operations is proper ULLS-A operator training. Operator training is as important to ULLS-A operations as instrument training is to the flight crew operating in inclement weather. The need to understand aviation maintenance and Army supply procedures is critical to ULLS-A operations. Not understanding maintenance concepts is a contributing factor to the problems and frustrations encountered by operators. Proper ULLS-A system training will include elements from both the basic manual procedures of aviation maintenance and proper execution of processes within the system, to include the built-in quirks. Unlike other standard Army management information systems, ULLS-A relies on the input of everyone involved with aviation maintenance, from the flight crew to the maintenance and supply personnel.

Incomplete installation of aircraft, components, and weapons systems, along with incorrectly installed maintenance master data file updates and Aviation and Missile Command (AMCOM) changes, can cripple the ULLS-A system. Experienced system administrators know which processes must be run after an AMCOM change is installed and make corrections as needed. Conversely, incorrect information entered by flight crew or maintenance personnel will have unfortunate consequences. Many system administrators and operators are not always properly trained on these and other essential tasks.

ULLS-A training has an impact on readiness and safety. With a thorough understanding of the ULLS-A system, personnel will be able to avert potential problems such as over-flying inspections, and also identify systematic problems with their aircraft through trend analysis. Similar to the combination of systems that enable an aircraft to fly, data in the ULLS-A system is the sum of the information provided by its many users. ♦

—Mr. Adams is a Functional Analyst with Logistics Management Resources, Inc. He may be reached at (804) 415-1501 or by e-mail at ladams@lmr-inc.com. Mr. Carman also is a Functional Analyst with LMR, Inc. He may be reached at (804) 415-1587 or by e-mail at vcarman@lmr-inc.com.

Plan Smart! Fly

The aviation world has changed since 11 September 2001, as if you somehow missed it. But before you yawn and flip the page, think about the Federal Aviation Administration (FAA) calling you about a flight violation, maybe due to busting into a temporary flight restriction (TFR) area or some other special-use airspace. The fact is that Armywide there has been a dramatic increase in pilot deviations, or flight violations, especially in the Washington, D.C., Air Defense Identification Zones (ADIZs).

Control of airspace in the National Airspace System (NAS) has reached new levels. TFRs have been used extensively since the 11 September attacks in an effort to protect locations vital to national security from potential threats. TFRs are being reviewed gradually and, if justified, translated into some form of special-use airspace. Pilot deviations are particularly serious matters in this era and are treated as such by both the DOD and the FAA.

Suppose you are flying in the NAS. The air traffic controller advises you that a flight deviation has occurred and asks you to please call by telephone to discuss the deviation when you land. Such an event strikes fear in the heart of every Army Aviator, especially those who hold FAA civilian flight certificates.

Some examples of recent military pilot deviations include:

■ Unauthorized flight into a presidential TFR.

■ Flying over an area protected by a TFR without ATC authority.

■ Flying to and landing at an airport (Class E surface area without a control tower) without ATC authority while operating under special visual flight rules (VFR) conditions.

■ Taxiing onto an active runway without proper clearance.

Information Army Aviators should NOT provide

First and foremost, DO NOT, repeat, DO NOT provide any FAA representative with your name and/or Social Security number over the radio or telephone. This also applies for all crewmembers on the flight, including crew chiefs and flight engineers. No names are to be given out.

Why, you ask? Army Regulation (AR) 95-1, *Flight Regulations*, paragraph 2-13.d, states: "Names of crewmembers of military aircraft involved in actual or alleged violations will be treated as restricted information and not be released to the public or any agency outside the DOD except by proper authority. Any person receiving requests for names of crewmembers of Army aircraft should direct such inquires to the Commander, U.S. Army Aeronautical Services Agency (USAASA)." USAASA headquarters (ATAS-ZA) can be contacted at DSN 656-4865/4863, fax 656-4409 (703-806-4865/4863, fax 703-806-4409).

Revealing your name and/or Social Security number could result in FAA enforcement procedures against you, such as suspending your FAA civilian flight certificate(s) for a short period of time, or even permanently, before you have an opportunity to rebut the allegations.

Information you should provide

Provide the FAA representative with your unit's name and address. Do not give your commander's name or telephone number. Remember that all telephonic inquiries are to be routed through USAASA. If your unit is contacted, the provisions of AR 95-1, paragraph 2-13, apply to whoever answers the phone. If the FAA persists in requesting crewmember names, refer them to USAASA.

The purpose of these actions is not to be uncooperative or devious with the FAA. Army Aviators are held accountable to their commander—not the FAA—for violations of either FAA or Army regulations. Again, Army commanders—not the FAA—are responsible for conducting investigations, which are done under AR 15-6, *Procedures for Investigating Officers and Boards of Officers*, or Chapter 4 of AR 600-105, *Aviation Service of Rated Army Officers*. AR 95-1 provides a timeframe for submitting the results of the investigation to HQ USAASA. Commanders are also responsible for taking action, which may include appropriate administrative, judicial, or non-judicial action.

Aviators who are performing authorized, briefed missions are not held in double jeopardy by FAA enforcement procedures and Army enforcement procedures per Federal Aviation Regulation (FAR) 13.21.

Routing of pilot deviation reports

Military pilot deviation reports and other alleged violations involving Army aircraft are forwarded from the FAA facility involved through the FAA regional headquarters to HQ USAASA. The deviation investigation report is then forwarded to the aviator's commander through the MACOM-, ARNG-, or USAR-level chain of command. The FAA normally establishes a suspense of 90 days for the reply to be returned to the FAA regional office.

The Department of the Army Regional Representative (DARR) to the FAA regional headquarters and HQ USAASA each receive a preliminary report from the FAA of the alleged deviation shortly after the event. The DARR informs HQ USAASA, the MACOM, ARNG, or USAR air traffic and airspace officer, and aviation safety officer that a military pilot deviation report has been received and a formal report may be pending.

The advance warning affords the unit commander the opportunity to obtain crewmember statements and explanations while memories are still fresh and, if necessary, implement individual or unit training to correct the problem. The official FAA deviation investigation request can sometimes take a great deal of time, 6 months or more, to reach the commander.

Fly safe

The bottom line is FLY SAFE, but do not knowingly violate the FARs. FARs have the weight of public law, and violation of FARs are serious. Protect your rights as an Army Aviator by:

- Complying with AR 95-1, paragraph 2-13, and not divulging restricted personal information.
- Informing your commander immediately if ATC informs you a flight deviation has occurred or you suspect one has occurred. Your commander should then contact the DARR in your region for further instructions. The DARR phone number may be found in either the Flight Information Bulletin or Table 6-1 of AR 95-2, *Air Traffic Control, Airspace, Airfields, Flight Activities, and Navigation Aids*.
- Doing thorough flight planning, including checking for and understanding the provisions of the TFRs and special-use airspace on and near your route of flight.
- Flying by the rules!

Points of contact are Mr. Paul Gillick, USAASA, Fort Belvoir, VA, DSN 656-4865/4863, (703) 806-4865 and Mr. Chet Spangler, USAASA, Fort Belvoir, VA, DSN 656-4865/4863, (703) 806-4863. ♦

—Originally published as *Plan Smart! Fly Smart!* in *Flightfax*, March 1995. Content edited and updated by LTC David Walker, USAASA.

Accident Briefs

Information based on preliminary reports of aircraft accidents

AH-64

A Model

■ **Class A (Two AH-64 Fatalities)**: The UH-60A crew was performing an NVG logistics and passenger transport mission with an AH-64A under NVS providing security. Just as the UH-60A was touching down on the taxiway leading to the FARP, the AH-64A's tail section impacted the UH-60A's main rotor system from above. Both aircraft were destroyed in a postcrash fire. See story inside this issue.

■ **Class C**: The flight crew received a mission change with a request to locate and attempt to recover a downed UAV. Aircraft entered brownout conditions and impacted the ground. This information was reported from a late accident report.

■ **Class C**: While conducting hot refuel operations, the aircraft fire guard attempted to get the fuel point shut-off guard's attention. The aircraft fire guard picked up a large rock and threw it at the fuel point shut-off guard. The rock struck one main rotor blade and tore off approximately 12 inches of the rear portion of the blade.

■ **Class C**: During a multi-ship flight at 200 feet AGL, trail aircraft impacted a flock of birds. CPG front windshield was struck by a bird and shards of glass fell onto the dashboard. Aircraft decelerated to 90 knots and returned to base. Aircraft was shut down without further incident. Post-flight inspection revealed multiple birds struck the aircraft including the Hellfire missile launchers (HMLs), nose gearbox covers, PNVS/TADS, 30mm gun, static mast, two main rotor blades, CPG front windscreen, and No. 1 engine. ECOD and engine inspections were completed. One main rotor blade and CPG windscreen were replaced and aircraft returned to FMC status. This information was reported from a late accident report.

■ **Class E**: During a backup control system (BUCS) test, the BUCS FAIL WARNING light illuminated and maintenance personnel reset the system. The second BUCS test also failed, illuminating the BUCS FAIL WARNING light as well as the BUCS ON CAUTION light, followed by OIL LOW PRI HYD caution light and primary hydraulic pressure dropping to zero. Aircrew shut down aircraft and found the primary hydraulics manifold empty and the pressure hard line to the tail rotor hydraulic servo had fractured at the lower elbow fitting. This information was reported from a late accident report.

D Model

■ **Class B**: During a third approach into the landing zone, the pilot overcorrected (applied aft cyclic and decelerated to avoid a flock of ducks), when the LOW ROTOR WARNING activated. The crew landed immediately. The maintenance data recorder (MDR) showed dual engine overtorque of 260 percent. One engine had 160 percent and the other had 146 percent, for a combined total of 306 percent. Preliminary ECOD is $940,320. Damaged components include transmission, gearboxes, and drive shafts. This information was reported from a late accident report.

CH-47

D Model

■ **Class E**: While conducting a postflight inspection, it was discovered that the green blade root liner at the blade retaining pin had slipped due to bonding material failure. The green blade was found resting on the bottom of the yoke, not floating as required. The crew had no indication during the flight. Fair wear and tear appears to be the cause. A new blade was installed and coordination is being made with Boeing on the repair of the root liner. This information was reported from a late accident report.

■ **Class E**: The FE informed the crew that the temp on the No. 1 flight hydraulics was on the rise. The temperature went from 55°C to 80°C within 15 minutes. The aircraft landed and shut down without further incident. Maintenance found the No. 1 flight hydraulic cooler fan operational check was completed IAW TM 55-1520-240-T and replaced the No. 1 flight control hydraulics temp indicator. Aircraft was released for flight.

E Model

■ **Class A (Fatality):** Aircrew landed on a narrow road in a steep ravine to offload U.S. Soldiers. The Soldiers remained at the rear of the aircraft to wait for the aircraft to depart. The Afghan interpreter broke away from the group and started up the right slope and was struck by an aft main rotor blade.

OH-58

D Model

■ **Class A (Damage):** An OH-58D crew was conducting a combat recon mission when their .50 Cal machine gun malfunctioned. Both aircrew members began troubleshooting the weapon system while still in flight and lost situational awareness. The PC in the right seat realized he was too close to the ground and attempted to recover the aircraft before impacting the ground. The aircraft hit on the left skid first, bounced, and then slid an additional 159 feet before coming to rest on its left side. The PC egressed unassisted and nearby Soldiers lifted the aircraft wreckage to free the PI's left arm which was pinned by the wreckage. Medical attention was provided on site by fire crew and medics. The crew was evacuated by UH-60L back to airfield and aircraft wreckage was later recovered to airfield as well.

■ **Class B (Damage):** During the landing phase of gunnery training, the IP was flying two students and noticed a hole in the left door of aircraft. Postflight inspection discovered numerous damaged parts on aircraft. Cause of damage is undetermined at this time.

■ **Class C:** A Raven UAV struck an OH-58 aircraft during flight at approximately 190 feet AGL. The UAV is reported to have experienced remote control problems and traveled outside of its restricted operational zone when it collided with the OH-58D aircraft in flight. Initial inspection deemed the ECOD among both aircraft at the Class D level, but subsequent developments raised damage to the Class C level. Local investigation is in progress.

HH-60

L Model

■ **Class B:** Postflight inspection revealed that the forward-looking infrared (FLIR) turret had separated from the aircraft, presumably in flight. No in-flight anomalies were reported by the crew; mean sea level (MSL) was 4,000 feet AGL. Initial inspection revealed that the turret separated from the 'gimble-assembly' point; the mounting remained attached to the aircraft and the aircraft reportedly sustained no collateral damage. Local board has convened to investigate. ECOD: $382K (Cost of FLIR turret).

UH-60

A Model

■ **Class A (Two AH-64 Fatalities):** The UH-60A crew was performing an NVG logistics and passenger transport mission with an AH-64A under NVS providing security. Just as the UH-60A was touching down on the taxiway leading to the FARP, the AH-64A's tail section impacted the UH-60A's main rotor system from above. Both aircraft were destroyed in a postcrash fire. See story inside this issue.

■ **Class C (Non-injury):** A flight of two ships was performing false insertion of Infantry troops into a landing zone. During landing, the pilot in the lead aircraft extended the approach using the collective to extend past a furrow. Crew noted nothing unusual on touchdown. Postflight inspection revealed damage to tail boom and stabilizer. Suspect aircraft struck protruding object in the grass.

■ **Class C (Damage):** Crew suspected a hard landing in snow conditions following confined area training. Postflight inspection revealed damage.

■ **Class C (Damage):** To avoid construction equipment, the aircraft air taxied to reposition on the airfield. The pilot made abrupt flight control inputs, causing the nose of the aircraft to pitch up/tail down. On visual inspection, the stabilator sustained damage from striking the ground. ECOD is $22,000.

■ **Class D**: While preparing for external load training, crew completed a cargo hook check. The cargo hook manual release switch was sticking but hook still passed check. Crew positioned over the load and hook failed to engage on first try. On second attempt, hook engaged and crew picked up load from the ground. At 50 feet AGL the hook slipped open, dropping the load and the blivit burst open resulting in damage to the blivit only. This was the first use of a cargo hook on this aircraft in over 8 months and aircraft had not gone through reset after desert deployment. Dirt in the cargo hook assembly caused hook to not latch properly and hook released under weight of the load. This information was reported from a late accident report.

■ **Class D (Damage):** Upon shutdown, the crew chief heard an unusual noise. After rotors stopped turning, a visual inspection of aircraft revealed that one T/R de-ice cable had pulled out at hub with remaining cable attached at canon plug on blade root. The structural wires had coiled around the conductors and had uncoiled during flight, extending past T/R tips and striking M/R tip caps. Two M/R caps showed significant damage. No indications of damage were manifested during flight. This information was reported from a late accident report.

■ **Class E:** The No. 1 engine went to idle during cruise flight. Aircraft was slowed to 80 knots and placed in lockout and landed at airport without incident. Materiel failure was the cause and a product quality deficiency report (PQDR) for the ECU is being done. This information was reported from a late accident report.

■ **Class F (Bird Strike):** Aircraft struck bird which resulted in engine damage. Aircraft and four crewmembers made a safe return to base.

L Model

■ **Class A (Fatality):** A crew of three was performing a VFR cross-country mission with four VIPs on board. Crew was attempting to re-file to an IFR flight plan when it struck a 1,700-foot guy wire on a television transmission tower at approximately 80 knots. Aircraft broke up in flight and crashed inverted in an open field. Over 50 percent of the aircraft was consumed by a postcrash fire. Aircraft was destroyed resulting in seven fatalities.

■ **Class A:** While flying on an OPBAT/NVG training mission as a flight of two, the crew encountered and continued flight into deteriorating weather. As the lead aircraft initiated IIMC procedures the pilot experienced spatial disorientation. The aircraft decelerated and descended into the trees at near zero airspeed. Chalk 2 initiated and completed IIMC procedures without declaring an emergency and continued to destination. All injured crewmembers were evacuated.

■ **Class B:** The PC was attempting to overfly an observation post on the perimeter of the camp when the rotor blades contacted the top of a HMMWV which was collocated with the observation post. The PC leveled the aircraft and safely landed. Shutdown was completed with no further damage.

■ **Class E:** During NVG multi-ship operations, the PI noticed a change in engine sound and looked inside to analyze the problem. Both engine Np and rotor Nr were at 130 percent. The PC reached up and retarded the No. 1 engine power control lever (PCL). Neither the engine nor the rotor responded. The No. 1 engine PCL was placed back into "fly" position and the No. 2 engine PCL was retarded with no response from either the engine or rotor. The PC informed the PI to initiate a descent and land the aircraft. The aircraft landed safely with a No. 1 high side failure. The aircraft was recovered without further incident. This information was reported from a late accident report.

■ **Class E:** Aircraft was taxiing into parking and went too far forward, allowing main rotor blade to strike a 2"x4" board sticking up out of a drum. Damage resulted to three main rotor blades approximately 4 inches inboard of the tip caps.

F Model

■ **Class E**: During VMC climbout, the pilot on controls noticed a 30 KIAS difference in airspeed indicators with the non-flying pilot's airspeed indicator appearing to be in error. After leveling off the climb at 7,000 feet MSL, the pilot on control's airspeed indicator showed airspeed of 40 to 50 KIAS faster than non-flying pilot's airspeed indicator. Aircrew returned to home station and landed without further incident. Upon engines shutdown, the pilot's airspeed indicator was stuck on 50 KIAS. Aircraft was placed on RED X condition. Replacement of the pilot's airspeed indicator and MOC was completed. Aircraft has been released for flight. This information was reported from a late accident report.

■ **Class E:** During cruise flight, the No. 3 engine oil temperature rose to 100 degrees Fahrenheit, (104 degrees being the maximum transient limit). The crew shut down the No. 3 engine in flight. Aircraft returned to airfield with no further incidents. This information was reported from a late accident report.

Shadow Model

■ **Class B (Damage):** The UAV was approximately 50 feet above the ground on its approach into the UAV launch and recovery site when it dipped to the left and impacted the ground. The fuselage of the UAV broke in half as a result of the impact. The UAV was under the control of the tactical automated landing system (TALS). Weather conditions at the time were within tolerance for air operations. The initial assessment is an engine failure.

■ **Class B:** The UAV went into emergency glide mode, displayed an IGNITION FAIL, GENERATOR FAIL, and BATTERY FAIL. The chute deployed. UAV has been recovered.

Raven Model

■ **Class C:** A Raven UAV struck an OH-58 aircraft during flight at approximately 190 feet AGL. The UAV is reported to have experienced remote control problems and traveled outside of its restricted operational zone when it collided with the OH-58D aircraft in flight. Initial inspection deemed the ECOD among both aircraft at the Class D level, but subsequent developments raised damage to the Class C level. Local investigation is in progress.

■ **Class C (Non-injury):** The UAV was returning to station when a dual engine failure occurred approximately 40 kilometers north of airfield. Recovery chute was deployed and the crash plan was activated. The UAV came to rest in a remote area, although ground and aviation units in area secured the site. A CH-47 was dispatched with recovery crew and successfully recovered the UAV. Front engine was experiencing a 1,000 to 2,000 ROM fluctuation and the AV was low on fuel at the time of dual engine failure. Investigation is underway.

Editor's note: Information published in this section is based on preliminary mishap reports submitted by units and is subject to change. For more information on selected accident briefs, call DSN 558-9552 (334-255-9552) or DSN 558-3410 (334-255-3410).

We Want to Hear From You

Because the cost of accidents is paid in lives, dollars, and readiness, we cannot afford to learn every lesson firsthand. Instead, we must learn from each others' experience whenever we can and share what we know.

Our number one request from *Flightfax* readers is for more first-person and lessons-learned articles. And that's the idea behind "War Stories," a recurring feature in *Flightfax*. The purpose of this column is to provide a forum for the entire Army Aviation community to learn from each others' experiences and to share how risk management works in real-world Army Aviation operations.

"Crew Commo," another recurring feature in *Flightfax,* gives aircrews and other aviation personnel an informal forum in which to communicate with each other. We hope to hear from all of you on a variety of topics, including maintenance personnel issues regarding safety and risk management in Army Aviation.

We make it easy to contribute. Here are a few notes so everybody understands the deal:

■ Space in *Flightfax* is limited, so please be as brief and to the point as possible.

■ We won't publish items that are submitted anonymously, but we will keep your identity confidential if you ask. It's the lesson, after all, that's important.

■ If we edit your story for length or clarity, we'll get your approval before publishing the revised version.

That's pretty much it. You can mail your story to:

Commander
U.S. Army Safety Center
ATTN: Flightfax
Bldg. 4905, 5th Ave.
Fort Rucker, AL 36362

You may also fax your story to DSN 558-3003 (334-255-3003), but the best way to get your story published is to e-mail **flightfax@safetycenter.army.mil**.

Please let us know how we can serve you better—we truly want to know! And we look forward to working with you as you contribute to Army Aviation safety through *Flightfax*.

—Paula Allman, Flightfax Managing Editor, DSN 558-9855 (334-255-9855), e-mail paula.allman@safefycenter.army.mil.

X

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